



Research Communications

Incensole acetate, an incense component, elicits psychoactivity by activating TRPV3 channels in the brain

Arieh Moussaieff, Neta Rimmerman, Tatiana Bregman, Alex Straiker, Christian C. Felder, Shai Shoham, Yoel Kashman, Susan M. Huang, Hyosang Lee, Esther Shohami, Ken Mackie, Michael J. Caterina, J. Michael Walker, Ester Fride, and Raphael Mechoulam

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Abstract

Burning of *Boswellia* resin as incense has been part of religious and cultural ceremonies for millennia and is believed to contribute to the spiritual exaltation associated with such events. Transient receptor potential vanilloid (TRPV) 3 is an ion channel implicated in the perception of warmth in the skin. TRPV3 mRNA has also been found in neurons throughout the brain; however, the role of TRPV3 channels there remains unknown. Here we show that incensole acetate (IA), a *Boswellia* resin constituent, is a potent TRPV3 agonist that causes anxiolytic-like and antidepressive-like behavioral effects in wild-type (WT) mice with concomitant changes in c-Fos activation in the brain. These behavioral effects were not noted in TRPV3^{-/-} mice, suggesting that they are mediated *via* TRPV3 channels. IA activated TRPV3 channels stably expressed in HEK293 cells and in keratinocytes from TRPV3^{+/+} mice. It had no effect on keratinocytes from TRPV3^{-/-} mice and showed modest or no effect on TRPV1, TRPV2, and TRPV4, as well as on 24 other receptors, ion channels, and transport proteins. Our results imply that TRPV3 channels in the brain may play a role in emotional regulation. Furthermore, the biochemical and pharmacological effects of IA may provide a biological basis for deeply rooted cultural and religious traditions.—Moussaieff, A., Rimmerman, N., Bregman, T., Straiker, A., Felder, C. C., Shoham, S., Kashman, Y., Huang, S. M., Lee, H., Shohami, E., Mackie, K., Caterina, M. J., Walker, J. M., Fride, E., Mechoulam, R. Incensole acetate, an incense component, elicits psychoactivity by activating TRPV3 channels in the brain.

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